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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,393	12/19/2005	Richard Lewis Riggs	SE/2-22908/MA 2235/PCT	1648

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EXAMINER

YOUNG, SHAWQUA

ART UNIT	PAPER NUMBER
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1626

MAIL DATE	DELIVERY MODE
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04/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,393	Applicant(s) RIGGS ET AL.	
	Examiner SHAWQUIA YOUNG	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-9 and 13-23 are currently pending in the instant application. Applicants have cancelled claim 10 and added claims 15-23 in an amendment filed on December 14, 2007.

I. *Response to Arguments*

Applicant's arguments, filed December 14, 2007, have overcome the restriction between subject matter of the elected invention claims 1-9, 13 and 14. The Examiner has agreed to rejoin the subject matter that was considered non-elected subject matter in the process claims 1-9, 13 and 14. The Examiner will examine the full scope of the process claims 1-9 and 13-23. The However, Applicants arguments are not persuasive and have not overcome the 103 rejection of claims 1-9, 13 and 14 over Morton, et al (WO 03/022848). Since Applicants argue that the Richter reference deals with efficient digestion of bio-materials in acid media, the Examiner will introduce a new reference that pertains specifically to microwave chemistry and organic synthesis. The rejection will be discussed in further detail below. The provisional rejection of claims 1-7, 13 and 14 on the ground of nonstatutory obviousness-type double patenting over 10/485,840 is maintained because Applicants have failed to file a terminal disclaimer in the instant application. Furthermore, the obviousness double patenting rejection is no longer provisional because the copending application is now US patent 7,326,793. The above obviousness double patenting rejection has been extended to the newly added claims 15-23.

II. **Rejection(s)**

35 USC § 103 - OBVIOUSNESS REJECTION

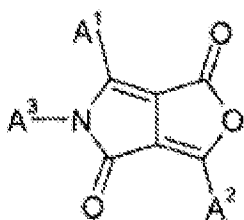
The following is a quotation of 35 U.S.C. § 103(a) that forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Graham v. John Deere Co. set forth the factual inquiries necessary to determine obviousness under 35 U.S.C. §103(a). See *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Specifically, the analysis must employ the following factual inquiries:

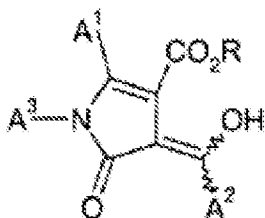
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9 and 13-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Morton, et al.* (WO 03/022848) and Bansal (1996). Applicants' elected subject matter in claim 1 is a process for the preparation of furopyrroles of the



general formula I, wherein A¹ and A² are each a carbocyclic aryl group and A³ is as defined in claim 1 excluding heteroaryl comprising (a) heating a

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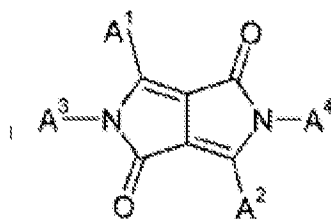
compound of the formula II

under microwave irradiation

optionally in the presence of an inert solvent, wherein A¹ and A² are each a carbocyclic aryl group and A³ is as defined in claim 1 excluding heteroaryl; R is as defined in claim

1. Claim 2 of the instant application claims the process of claim 1, comprising in addition

reacting a compound of formula I with a primary amine of the formula A⁴-NH₂ (IV),

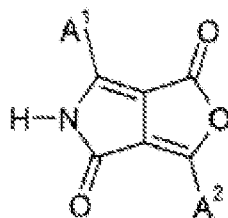


wherein a DPP of formula III

is obtained, wherein A⁴ is as

defined in claim 2 excluding heteroaryl. Claim 3 of the instant application claims the

process according to claim 1, wherein the compound of the formula I, is obtained by



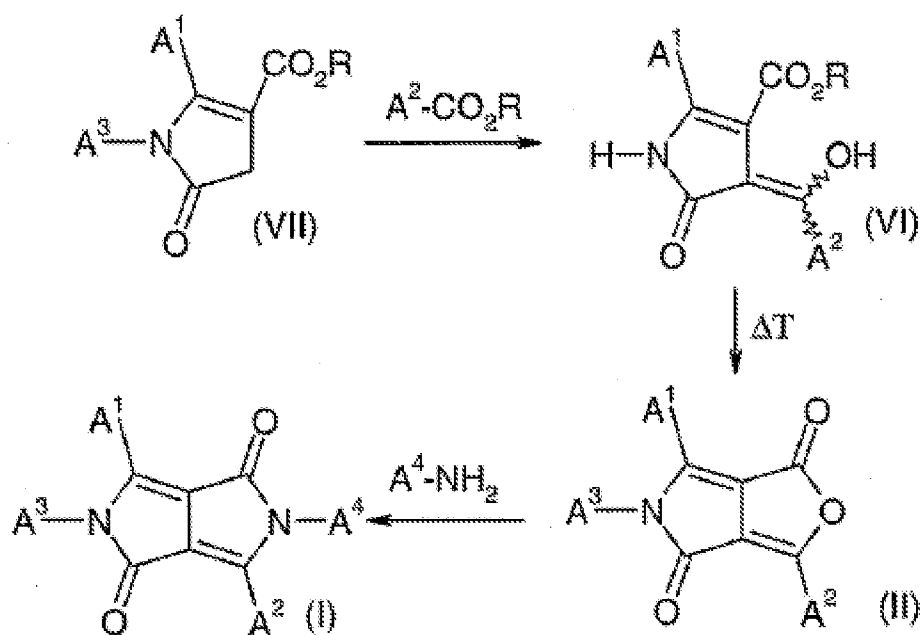
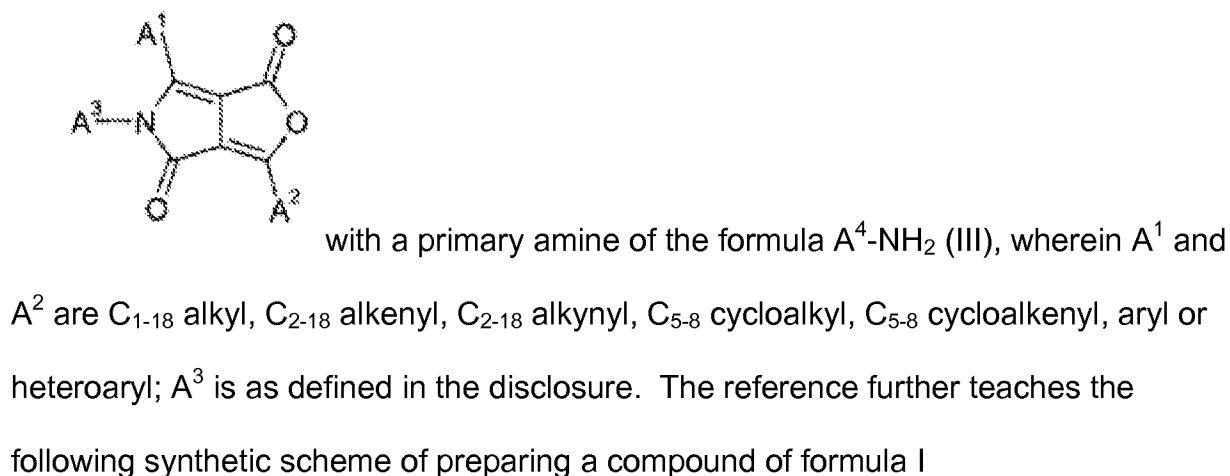
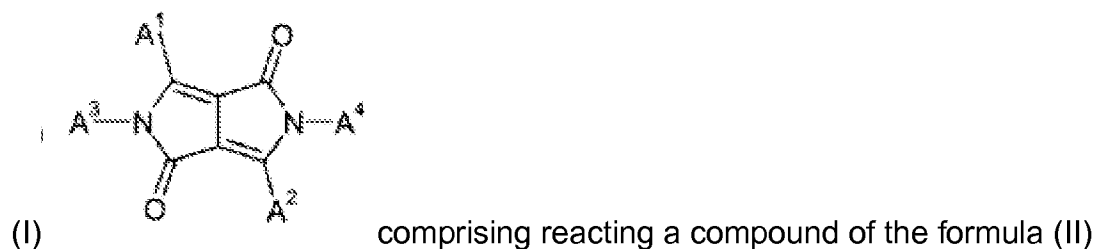
reacting a compound of the formula Ia

with a compound of the

formula (V) A³-X, wherein X is a leaving group.

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Morton, et al. teaches a process for the preparation of a compound of the formula



(See page 9).

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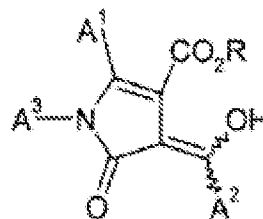
According to Example 1 on page 33, the compound of formula II is prepared by heating compound VI at high temperatures via conventional methods.

Bansal teaches that microwave irradiation in organic synthesis is used as an efficient thermal energy source. The rapid heating capability of the microwave oven leads to a considerable saving in time. There has been increasing interest in the applications of microwave irradiation to chemical reactions. Spectacular results have been obtained giving clear indication on the potentialities and advantages of this new technique when compared to conventional methods.

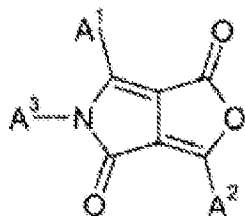
The Difference Between the Prior Art and the Claims (MPEP §2141.02)

The difference between the prior art of *Morton, et al.* and the instant invention is that the applicants are claiming a process for preparing furopyrroles that comprises

microwave irradiation of a compound of formula

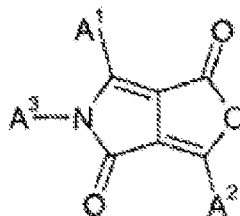


to obtain a



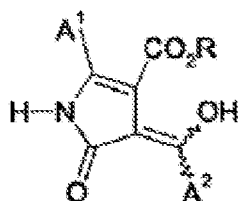
compound of the formula

. The process claimed in the reference



obtains a compound of the formula

by heating a compound of

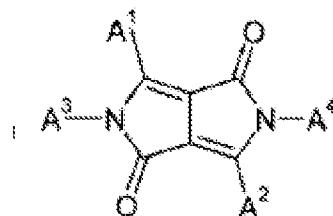


formula

via conventional methods.

Prima Facie Obviousness-The Rational and Motivation (MPEP §2142-2413)

In *In re Aller*, 220 F. 2d 454, 105 U.S.P.Q. 233 (C.C.P.A. 1955), it was well established that merely modifying the process conditions such as temperature and concentration is not a patentable modification absent a showing of criticality. As mentioned above, the only difference between the instant claims and the reference is



that the process of preparing fuopyrroles of formula

is obtained

by heating compounds of formula (II) in the instant application and formula (VI) in the *Morton, et al.* reference in an inert solvent. The heating is done by microwave irradiation in the instant application whereas the reference uses heating via conventional methods. According to the *Bansal* reference, spectacular results have

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been obtained when using microwave irradiation in chemical reaction giving clear indication on the potentialities and advantages of microwave irradiation when compared to conventional methods. Therefore, one of ordinary skill in the art would have been motivated to prepare furopyrroles by utilizing heating by microwave irradiation at the time of filing this application and expect this method to be advantageous and more efficient. Claiming a known process with a slight change in heating mechanism is obvious absent a showing of unexpected results and/or properties. A strong prima facie case is established.

III. Conclusion

Applicant's amendment did not overcome the previously made rejection and the rejection is maintained. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawquia Young whose telephone number is 571-272-9043. The examiner can normally be reached on 7:00 AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shawquia Young/

Examiner, Art Unit 1626

/Joseph K McKane/

Supervisory Patent Examiner, Art Unit 1626